The fluctuation in recovery following whiplash injury
7.5-year prospective review

FROM ABSTRACT:

Forty-two patients with a whiplash injury were assessed at the time of injury, after 3 months, 2 years and a mean of 7.5 years. The range of neck movement, pain, its effect on lifestyle, and psychometric testing were determined in each of the patients.

Between 2 and 7.5 years, 5 (12%) described improved symptoms, 12 (29%) complained of continuing pain and 14 (33%) reported increased severity of symptoms since the accident.

Neck pain was the commonest complaint in 23 (55%) and low back pain in 18 (43%).

Radiation of pain was more common in the severely symptomatic patients.

There was no significant difference in either the ages or sex of the patients between the symptomatic and asymptomatic groups.

Anxiety and depression correlated well with symptom severity. None of the asymptomatic patients revealed any degree of psychological disturbance compared with 30 (77%) in the symptomatic groups.

Symptoms largely stabilised within 3 months but there was significant fluctuation in symptom severity between 3 months and 2 years. This suggests that outcome cannot be accurately assessed during this time [during the first 3 months].

In order to effectively manage those most severely affected by whiplash, patients should be identified within the first 12 weeks following injury if the outcome of their injury is to be modified.

THESE AUTHORS ALSO NOTE:

“Whiplash is a flexion–extension injury of the cervical spine that causes firstly physical and then secondary psychological symptoms.” [This is a very important statement. It indicates that the psychological symptoms suffered by whiplash patients are secondary to physical injury.]
The aim of this study was to examine the variation in physical symptoms and psychological responses over a mean of 7.5 years.

42 rear-end vehicle collision injured patients were followed-up at a mean of 7.5 years.

Patients were assessed using both physical and psychometric tests, including:

1) The Gargan and Bannister classification of the impact of pain on patients’ lifestyle.

<table>
<thead>
<tr>
<th>Group</th>
<th>Symptoms</th>
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<tbody>
<tr>
<td>A</td>
<td>Asymptomatic</td>
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<tr>
<td>B</td>
<td>Mild symptoms not affecting work or leisure activities.</td>
</tr>
<tr>
<td>C</td>
<td>Intrusive symptoms interfering with work or leisure; frequent use of analgesics, orthosis or physiotherapy.</td>
</tr>
<tr>
<td>D</td>
<td>Severe problems: lost job, continual reliance on analgesics, orthosis; repeated medical consultations.</td>
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</tbody>
</table>

2) Pain was classified by the McGill questionnaire.

3) Range of neck movement and neurological deficit were recorded.

4) A pain map recorded the site of pain and areas of radiation.

5) Pain severity was determined using a visual analogue scale.

6) Psychometric testing was performed using the general health questionnaire, Beck depression inventory and the hospital anxiety and depression scale.

Of the 42 patients reviewed, at 7.5 years:

12 (29%) were asymptomatic (group A: 6 men and 6 women).

20 (48%) had mild symptoms (group B: 13 men and 7 women) not affecting work or leisure.

   In this group,
   9/20 = 45% reported paraesthesia in one or both arms
   8/20 = 40% reported persistent headaches
   4/20 = 20% reported dizziness and tinnitus

   “None of these patients with paraesthesia had signs of carpal tunnel syndrome and neurological examination was otherwise normal.”

   [Important, one can have paresthesias with normal neurological exam]
9 (21%) complained of intrusive symptoms (group C: 3 men and 6 women), which interfered with work or leisure resulting in the frequent use of analgesics, orthosis or physiotherapy.

1 (2%) female described severe problems with continual reliance on analgesics and repeated medical consultations (group D).

Neck pain was the principal symptom affecting 23 (55%) patients.

18 (43%) complained of continued lower back pain.

16 (38%) described paraesthesia and headache.

Between 3 months and 7.5 years, the symptoms

Improved in 7 patients (17%).

Remained the same in 27 patients (64%).

Deteriorated in 8 patients (19%).

Between 3 months and 2 years

7 (17%) patients improved.

30 (71%) patients remained the same.

5 (12%) patients deteriorated.

Between 2 and 7.5 years

6 (14%) patients improved.

29 (69%) patients remained stable.

7 (17%) patients deteriorated.

Between 3 months and 1 year

13 (31%) patients improved.

28 (67%) patients remained stable.

1 (2%) patient deteriorated.
Between 1 to 2 years

3 (7%) patients improved.

28 (67%) patients remained stable.

11 (26%) patients deteriorated.

29 (69%) patients complained of neck pain at 7.5 years.

The mean visual analogue score (0-100 scale) for pain for those in
- Group A was 4
- Group B was 16
- Group C was 41
- Group D was 80

DISCUSSION

“This study prospectively assessed patients at 3 months, 1, 2 and 7.5 years and highlights the fluctuation in symptom severity at these times.”

“Our results support the work of previous authors, demonstrating little alteration in symptoms by 3 months and stabilising at 2 years.”

[IMPORTANT, it took 2 years for the symptoms to stabilize]

By 7.5 years 64% of patients have the same symptom severity they had at 3 months, and in 36% their symptom status changed: 17% improved and 19% deteriorated.

“Between 3 months and 2 years symptoms fluctuate significantly and during this time any estimation of patients’ prognosis will be unreliable.” [Very Important]

The cause of this fluctuation is “important in medico-legal reporting since patients’ outcome can only be predicted at 3 months and not confirmed until 2 years.” [Very Important]

“Therapeutically, the greatest potential for influencing the natural history of whiplash is within 3 months before symptoms become established.”
KEY POINTS FROM DAN MURPHY

1) The psychological symptoms suffered by whiplash patients are secondary to physical injury.

2) In this prospective study, 7.5 years after sustaining whiplash injury:
   A) 29% of the patients had no symptoms.
   B) 48% had mild symptoms that did not interfere with work or leisure.
   C) 21% had intrusive symptoms that interfered with work and leisure and required continued treatment and drugs.
   D) 2% had severe problems that required ongoing medical investigations and drugs. **This means that 71% of patients had symptoms 7.5 years after being injured.**

3) The symptoms of whiplash-injured patients fluctuate widely during a 7.5 year period.

4) It takes 2 years for whiplash symptoms to stabilize.

5) 64% of whiplash-injured patients have the same symptom severity at 7.5 years that they had at 3 months. Therefore, most [64%] whiplash-injured patients require intensive management during the first 3 months following injury if there is any hope of altering this long-term chronicity.

6) 17% of whiplash-injured patients will have symptom improvement between 3 months and 7.5 years.

7) 19% of whiplash-injured patients will have symptom deterioration between 3 months and 7.5 years.

8) “Between 3 months and 2 years symptoms fluctuate significantly and during this time any estimation of patients’ prognosis will be unreliable.” **[Very Important]**

9) The cause of this fluctuation is “important in medico-legal reporting since patients’ outcome can only be predicted at 3 months and not confirmed until 2 years.” **[Very Important]**

10) “Therapeutically, the greatest potential for influencing the natural history of whiplash is within 3 months before symptoms become established.”

11) [I believe that in an effort to reduce chronic pain and disability from whiplash injuries, we should treat the patient daily for 2 weeks and then 3X per week for 10 weeks.]

12) [The assertion that whiplash-injured patients should recover in 6-12 weeks is absurd.]